

SWBAT: discover series and parallel circuits

Jan 4-7:20 AM

More practice using Ohm's Law:

VOLTAGE = CURRENT  $\times$  RESISTANCE

$$V = I \cdot R$$

a)  $R = 10\Omega$ ,  $I = 3A$ ,  $V = ?$   
 $V = I \cdot R = 3A \cdot 10\Omega = 30V$

b)  $V = 12V$ ,  $I = 4A$ ,  $R = ?$   
 $R = \frac{V}{I} = \frac{12V}{4A} = 3\Omega$

$$\frac{V}{I \cdot R}$$

c)  $V = 3V$ ,  $R = 6\Omega$ ,  $I = ?$   
 $I = \frac{V}{R} = \frac{3V}{6\Omega} = 0.5A$

d) YOUR TURN! MAKE UP A QUESTION ON INDEX CARD...

Mar 10-6:49 AM

SECA Physics  
Tuesday 3 March 2015

# Welcome!!!

H. Leslie Grebe

\* Pick up:

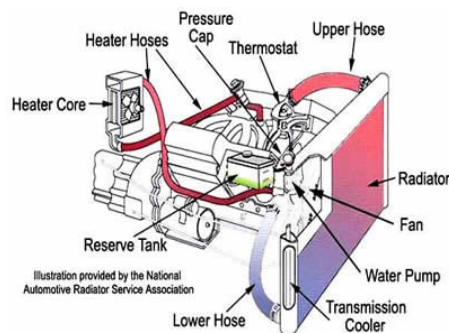
- slip of paper (for later)
- yellow concept sheet from shelf

## Opening Questions:

Cooling system on a car: better for it to have openings or be closed???

↳ BAD      ↳ CIRCUITS

centering



Sep 7-7:04 AM



## Mystery Resistor - extra credit

- You may work alone or with at most one other person of your choosing.
- Get a "Mystery Resistor" labeled with a letter from Leslie
- Use the same equipment that our teams used in class. Take measurements that will allow you to calculate the resistance (in Ohms) of your resistor.
- You may work when there is spare time in class, during lab or arrange other time with Leslie.

Due by 3:00 Friday 3/27

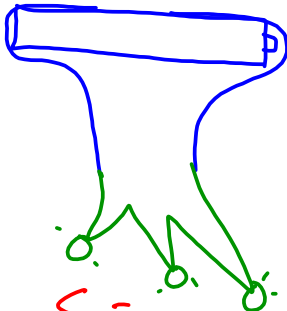
Jan 19-7:12 AM

## Puzzle of the day:

With 2 batteries and 2 wires, how many bulbs can you get to light???

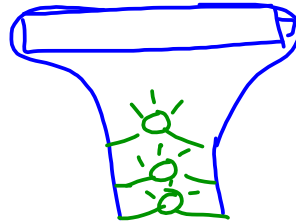
Safety Rule???

NOT about adding voltage (batteries)



SERIES

- MORE BULBS = DIMMER
- ONE PATH
- ALL WORK OR NONE



PARALLEL

- MORE BULBS = SAME BRIGHT
- MORE THAN 1 PATH
- ADD OR SUBTRACT  
→ NO DIFFERENCE

Mar 9-7:31 AM

Concept sheet: 6 rows total

Concept	Meaning	Symbol	Units	Analogy
CHARGE	PROPERTY OF PROTONS & ELECTRONS THAT CAUSES ATTRACTION & REPULSION	$q$	COULOMBS $C$	
VOLTAGE = ELECTRIC POTENTIAL	POTENTIAL BASED ON POSITION IN AN ELECTRIC FIELD "PUSH"	$V$	VOLTS $V$ $1V = \frac{1J}{1C}$	PERSON PEDALING ⇒ THE PUSH
CURRENT	THE FLOW OF ELECTRIC CHARGE = $\frac{CHARGE}{TIME}$	$I$ $I = \frac{q}{t}$	AMPERE $A$ $1A = \frac{1C}{s}$	- WHEEL CHAINS MOVING
RESISTANCE	OPPOSITION OF CURRENT "AGAINST THE FLOW"	$R$	OHMS $\Omega$	BRAKES
OHM'S LAW	VOLTAGE = CURRENT TIMES RESISTANCE	$V = I \cdot R$	$1V = 1A \cdot 1\Omega$	HOW HARD DO YOU PEDAL? BRAKE AFFECTS SPEED

$$\frac{q}{I \cdot t}$$

$$\frac{V}{I \cdot R}$$

Feb 23-7:34 AM

### Daily 3 Questions

- \* Every day except test/project days
- \* 3 Questions on the topics of the day
- \* Main source of daily points
- \* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

CP Homework - Explain why a bulb won't light with one wire to either side.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. Are the bulbs brighter in series or in parallel?

2. What is the name for a circuit that has more than one path (series or parallel)?

PARALLEL

3.  $I = 3 \text{ A}$  and  $R = 10 \text{ ohms}$ : What is the voltage?

$$V = I \cdot R = 3 \text{ A} \cdot 10 \Omega = 30 \text{ V}$$

Feb 18-6:59 AM